



## The AFHSC-Division of GEIS Operations Predictive Surveillance Program: A multidisciplinary approach for the early detection and response to disease outbreaks

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### Abstract:

The Armed Forces Health Surveillance Center, Division of Global Emerging Infections Surveillance and Response System Operations (AFHSC-GEIS) initiated a coordinated, multidisciplinary program to link data sets and information derived from eco-climatic remote sensing activities, ecologic niche modeling, arthropod vector, animal disease-host/reservoir, and human disease surveillance for febrile illnesses, into a predictive surveillance program that generates advisories and alerts on emerging infectious disease outbreaks. The program's ultimate goal is pro-active public health practice through pre-event preparedness, prevention and control, and response decision-making and prioritization. This multidisciplinary program is rooted in over 10 years experience in predictive surveillance for Rift Valley fever outbreaks in Eastern Africa. The AFHSC-GEIS Rift Valley fever project is based on the identification and use of disease-emergence critical detection points as reliable signals for increased outbreak risk. The AFHSC-GEIS predictive surveillance program has formalized the Rift Valley fever project into a structured template for extending predictive surveillance capability to other Department of Defense (DoD)-priority vector-and water-borne, and zoonotic diseases and geographic areas. These include leishmaniasis, malaria, and Crimea-Congo and other viral hemorrhagic fevers in Central Asia and Africa, dengue fever in Asia and the Americas, Japanese encephalitis (JE) and chikungunya fever in Asia, and rickettsial and other tick-borne infections in the U. S., Africa and Asia.

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### Resource Description

#### Exposure :

weather or climate related pathway by which climate change affects health

Ecosystem Changes

#### Geographic Feature:

resource focuses on specific type of geography

None or Unspecified



# Climate Change and Human Health Literature Portal

## **Geographic Location:**

resource focuses on specific location

Global or Unspecified

## **Health Impact:**

specification of health effect or disease related to climate change exposure

Infectious Disease

**Infectious Disease:** Foodborne/Waterborne Disease, Vectorborne Disease, Zoonotic Disease

**Vectorborne Disease:** Fly-borne Disease, Mosquito-borne Disease, Tick-borne Disease

**Fly-borne Disease:** Leishmaniasis

**Mosquito-borne Disease:** Chikungunya, Malaria, Rift Valley Fever, Viral Encephalitis

**Tick-borne Disease:** Crimean-Congo Haemorrhagic Fever, Other Tick-borne Disease

**Tick-borne Disease (other):** Rickettsial fever

## **Mitigation/Adaptation:**

mitigation or adaptation strategy is a focus of resource

Adaptation

## **Model/Methodology:**

type of model used or methodology development is a focus of resource

Exposure Change Prediction, Outcome Change Prediction

## **Resource Type:**

format or standard characteristic of resource

Review

## **Timescale:**

time period studied

Time Scale Unspecified

## **Vulnerability/Impact Assessment:**

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

A focus of content